Scientist as Poet as Scientist

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For as long as I can recall I have been a scientist. Early memories as a child include turning over rocks and probing under bushes in search of elusive insects, dissecting knowledge from road kill, and splitting it from fossil-rich shale. But also, for as many years as I can remember, I have created poetry. Sometimes this has been permanent written text, other times only thoughts and fragments, committed to temporary memory and ultimately lost like the bugs I studied in jars and released back into the wild. Over time the science has become public-facing as hobbies were turned into a career. The poetry remained turned inward, written for myself, only occasionally on show to lovers or to audiences at local spoken-word events.

Perhaps the idea of scientist as poet is too contradictory to bear serious scrutiny, but both of these aspects of my life relate to a deep, enquiring curiosity that has always been present. Both reflect a need to understand something of this complex, confusing world we inhabit, and the place of people and their relationships with one another, and with the environment in a wider, encompassing nature.

In the first volume of *Dark Mountain* I stepped out as a scientist-poet and contributed an essay-with-poetry entitled 'W(h)ither Science?', which was a very personal take on the role of scientists, and the knowledge they generate, in the early 21st century. This piece was framed within the context of uncivilised ideas of 'what happens when it all goes wrong?' I prefer to think of it as 'if' rather than 'when' because, as I originally put it, 'knowledge is not predictable'. In other words, we don't know what will happen in the future, so we can only prepare for a range of outcomes. If we take the best of the

sciences and of the arts, and of the education they generate, perhaps we can survive as a species and as a set of communities.

Was that really only six years ago? So much has happened in the intervening period; the science has turned ever more outward, with more writing for scientific journals, magazines, my blog, and more presentations of the research undertaken by my group to other scientists, to policy makers and NGOs, and to the public. The poetry, meanwhile, has remained private, which led me to consider whether it was time to give up a little more. The two short poems in this essay were both written more than ten years ago, though they have been revised and polished periodically. Even as I began to construct this piece I was revising words and reconsidering sentence structure, much as I might revise the analysis of a data set or reconsider its interpretation when writing a scientific paper. One of the things I love about producing poetry is that its form is malleable, it's never complete, I can change it when I wish. This malleability is also a feature of science: we revise our ideas when confronted with new evidence, rejecting previously supported hypotheses in favour of more accurate notions of the universe.

Chains of Copper, Locks of Lead

Mention a river:
I may have heard of it,
Or talked to a woman who has gazed at its bed.
Cage its waters, bind its banks,
With chains of copper, and locks of lead.

Ultimately bending to time, eroding
The surge and the volume sustaining, removing.

Weighed down, I lay down,
And the river unconscious
Passed over my body and on to the sea.
While my lover cast stones from the bank to the current.
The banks of my body, the river of me.

Due to their inherent chemical properties, both lead and copper are relatively ductile, weak metals: they cannot withstand the force of a river indefinitely. In the same way, no matter how much we believe we can tame rivers or seas or any other component of the natural world, ultimately the environment will prevail. It just takes time. We might canalise a river to prevent flooding or dam it to provide hydro-electricity, but not realise that in its untamed state the river is more valuable, as it provides food, allows travel, brings fertility to flood plains. What, then, does it mean to 'know' something about a river? Whose knowledge is more valuable, which expert do we trust? The internet is awash with information, but knowledge, first and second-hand, can both enlighten us and sometimes prevent us from really understanding.

Ordinary by Choice

She chose the route and chose her topics,
Modular waypoints across years of work.
Decisions based on the balance of a gyroscopic
Pursuit of life, work, and an honours degree.
Finally, she elected to be
Ordinary by choice.

A student who chooses not to complete a final year dissertation module – and so graduate with Honours – but rather exit university with an Ordinary degree, is described as 'Ordinary by choice'. The phrase strikes me as both poetic and prophetic. Could anyone choose to be 'ordinary', and even if they could, is such a thing desirable? Is the course of a simple, ordinary life preferable to one that is complex and extra-ordinary? Does anyone truly believe that their experience of our rich, intricate world, in which decisions are made about priorities and 'balance of life', is ordinary, no matter how they make a living or what they do to fill their days?

Education in its widest sense, both formal and informal, taught and autodidactic, is a constant and destinationless journey that takes us from ignorant to less-than-ignorant. It is no coincidence that we use the same word ('course') in education, and to describe a river, and a life. A river's function, as far as people are concerned, depends on choices that we make as to its course and fate. But even without human intervention that course naturally shifts over time and its destination is not necessarily the sea: much depends on geological events and the resulting topography of the land, at time scales uncaptured by the course of an individual's experience.

The scientific research that I undertake is an attempt to capture truths about the ecological functioning of our planet and how it underpins human societies, no matter how technological or industrialised. It takes collected, often hard-won, data, internally scrutinises it for meaning, and externalises the findings into tables, graphs and written texts, that may influence other scientists or emerge in government reports or policy documents. My poetry takes ideas, emotions, feelings, and projects that mix of internal and external worlds into forms that sometimes, but not always, make sense to me. Empirical truths and emotional truths are not the same thing, and in fact may be contradictory and counter-factual. But empirical rationalism and emotional construction can coexist, and often do within the minds and personalities of scientists. Most do not produce poetry, but every scientist I know is emotionally invested in their subject and openly describes their science in terms of delight, rage, obsession, elation and disappointment, every bit as intense as any poet.